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NOTES ON WEST AMERICAN OYSTERS.

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On endeavoring to review the oysters of the Pacific Coast some notes were made which seemed likely to be of use to students.

OSTREA IRIDESCENS Gray, 1854; Cpr. Maz. Cat., 1856.

The brief diagnosis of the earlier name is not sufficient to identify this with *O. prismatica* Gray, 1825. *O. spathulata* Sowerby, 1871, is based on a worn upper valve of *O. iridescens*. The species is known to range throughout the Gulf of California and to Mazatlan. I have not compared the African species listed by Carpenter under the same name.

O. MEGODON Hanley, 1845. (*O. gallus* Val., 1846, and *O. taylori* Gabb, 1866).

From the Gulf of California to Peru. Fossil in the West Indies.

O. FISHERI Dall, n. nom. (*O. jacobæa* Rochebrune, Bull. Mus., Paris, 1895, not of Linné, 1758).

Rude, dark purple, sharply plicated, with an inner purple margin, valves subequal, and interior opaque white. Named in honor of W. J. Fisher who made large collections in the Gulf of California and Alaska. This species grows large and heavy, and is only known from the Gulf of California.

O. VEATCHII Gabb, 1866.

Large, rather roundly plicated, internally with olive, brown stains

and white margin. Lower California and the Gulf. Fossil at San Diego and Cerros Island.

O. CUMINGIANA Dunker, Abbild. II, 1847. (*O. amara* Cpr., 1857; *O. angelica* Rochebrune, 1895. A variety, *O. mexicana* Sowerby, 1871).

The typical form has olive greenish interior, the margin with many small plications, the exterior white. The variety is deeply cup-shaped with blackish interior margin. The species ranges from Lower California to Panama.

O. PALMULA Carpenter, 1857 (*O. lucasiana* Rochebrune, 1895). Puget Sound to La Paz, Mexico.

Margin bounded inwardly by a line of minute pustules, interior dark or greenish. This might well be an extreme mutation of the preceding species but needs connecting links and has a more northern distribution.

O. SERRA Dall, n. sp.? Lower California to Panama.

Like the West-Indian species which grows on gorgonians, narrow, plicate, with flattish upper valve, deep lower valve, greenish outside, inside white with black margin; shell two to three inches long, about an inch wide. If *mexicana* occupied a similar situs the result would be somewhat similar.

O. COLUMBIENSIS Hanley, 1845. (*O. ochracea* and *tulipa* of Sowerby, 1871, not *O. tulipa* Lamarck; *O. turturina* of Rochebrune, 1895). On mangroves. Lower California to Peru. Large, thin, purplish.

O. LURIDA Carpenter, 1864. Sitka to Cape St. Lucas.

O. rufoides is the thin, long variety grown in a current. *O. expansa* the form adhering to a flat surface; sometimes reaching the shape called by Carpenter *laticaudatus*.

O. ELONGATA Solander, 1786. (*O. virginica* Gmelin, 1792; *O. rostrata* and *floridensis* Sowerby, 1871; *O. virginiana*, *canadensis* and *borealis* Lamarck, 1819.)

Transplanted from the middle Atlantic coast it has failed to reproduce its kind, as the water is too cold for the spat to live in.

O. CONCHAPHILA Carpenter, 1856. Mazatlan to Panama. This prettily painted form seems likely to retain specific rank.

O. CHILENSIS Philippi. Gulf of California to Chile.

This is the large edible Gulf species, referred by Carpenter to *O. virginica*, which it much resembles except in wanting the purple muscular impression. It has numerous synonyms. *O. retusa* Reeve, of the Hawaiian Pliocene is also very similar.

O. CHILOENSIS Sowerby, from southern Chile, is small, round, and feebly plicate, but may be a degenerate variety of *O. chilensis*.

O. MULTISTRIATA Hanley, 1846. Gulf of California to Panama.

Usually small and flat with brown and purple blotches on the white inner surface. Easily identified by the sharp radial striæ of the outer surface which is usually a purple tint.

OSTREA TUBULIFERA Dall, n. sp.

The specimen serving as type for this species was collected in the Gulf of California by Henry Edwards; it is suborbicular, about 45 mm. in diameter, nearly flat, with a whitish nacre, brilliantly polished inside, purple clouds showing through, and with a translucent irregularly crenulated margin. The ligamentary area is narrow and very inconspicuous; on each side of it the margin is pustulate for a short distance; the outer surface is mostly dark purple, dull, minutely corrugated and densely covered with small erect tubules of a dark reddish-brown color, 2 to 4 mm. high and from $\frac{2}{3}$ to 1 mm. in diameter. Only those at the extreme margin communicate with the interior of the valves, and these are fissured on the distal side. Those of the surface behind the margin are completely tubular. The attached valve was not obtained. Several beachworn specimens from Panama have lost their tubules and exhibit only a vermicularly corrugated surface. The attached valve is very flat and irregular with a very wide but very short area. These specimens are of a faded purple, but are probably the same species as the valve from the Gulf of California. The only species at all approaching this in character is the *O. spinosa* Quoy, which comes from a widely different region, and has a very prominent, direct and produced ligamentary area.